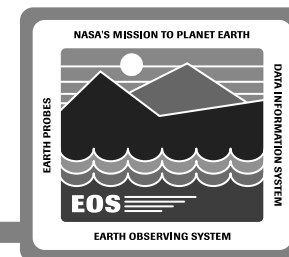# Data Server Subsystem Capabilities Phasing and Sizing

Mark Huber

14 February 1995
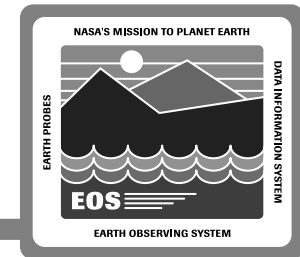
Data Server Subsystem Phasing of Capabilities

- **Maintain the Vision During Implementations**

  - **Hardware Moves -> Functions Change**

  - **Software Enhances**

- **Release A is an Operational Configuration**

- **Defer Purchases of Equipment/Technology**

  - **Allow for Technology Maturation**

  - **Take Advantage of Progressively Lower Prices**

Phasing of Capabilities
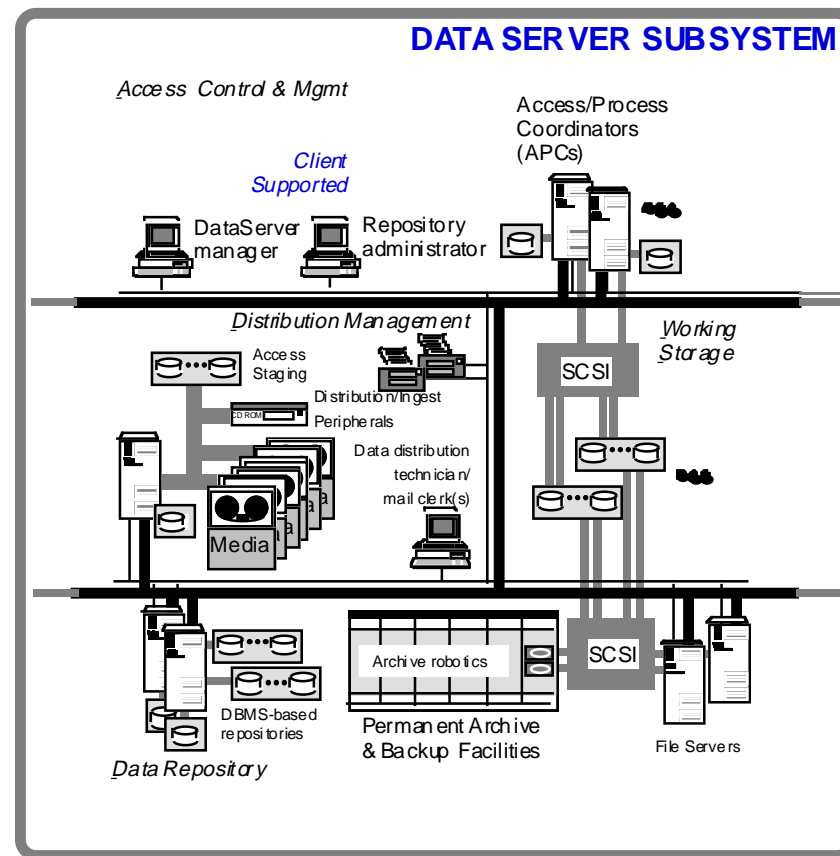# System Functionality

- **Release A is a Fully Operational Storage/Retrieval System**

    - **Software Functional to Support TRMM Mission**

    - **Hardware Sized Properly**

    - **Full Mission Support as Delivered - Deep Archive Media Would be Phased In**

- **Later Releases**

    - **Enhancements to Functionality**

    - **More Data Types and Services**
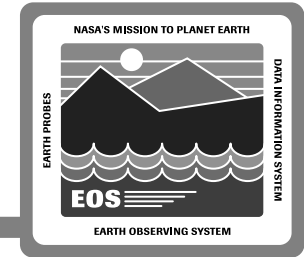
    - **Optimizations**

Phasing of Capabilities Hardware

Release A Configuration

DATA SERVER SUBSYSTEM

Access Control & Mgmt

Access/Process Coordinators (APCs)

Client Supported

DataServer manager

Repository administrator

Distribution Management

Access Staging

CD ROM

Distribution/Ingest Peripherals

Data distribution technician/ mail clerk(s)

Media

Working Storage

SCSI

DBMS-based repositories

Data Repository

Archive robotics

Permanent Archive & Backup Facilities

SCSI

File Servers

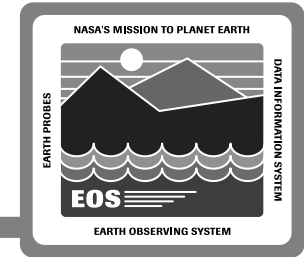# Phasing of Capabilities Hardware (cont.)

CPU at all Sites (2 OF EACH TYPE):

- FSMS (Server)
- Distribution (Workstation)
- Access Control (Workstation and Server)
- DBMS (Server)

OTHER COMPONENTS

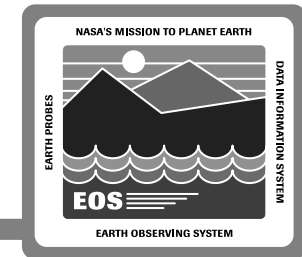|	TAPE DRIVES	FIELDED MEDIA CAPACITY	DISTRIBUTION RAID CAPACITY	WS RAID CAPACITY	DBMS RAID
GSFC	2	6 TB	10 GB	30 GB	45 GB
LaRC	2	3 TB	10 GB	50 GB	13 GB
MSFC	2	4 TB	10 GB	30 GB	5 GB

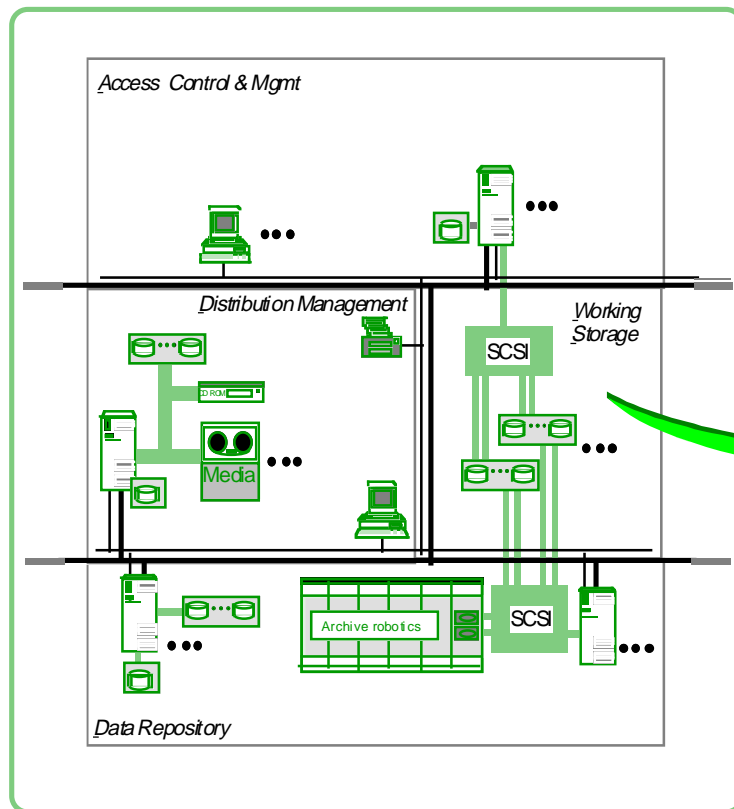# Phasing of Capabilities Hardware (cont.)

Assumptions/Rationale

- **WORKING STORAGE SHARED DISK POOL**

  - Peak utilization for CERES products during REL. A (Processing Only)

  - User Modeling predictions of maximum number of users per hour at a site

  - AHWGP predicted largest requested granule size

- **ARCHIVE**

  - Total stored volume of the Release A TRMM data

  - Ingest of identified V0 Data Sets up to Release B initial operations (12/1997)

  - Backup capacity for all data

- **DBMS**

  - Estimates for Metadata size

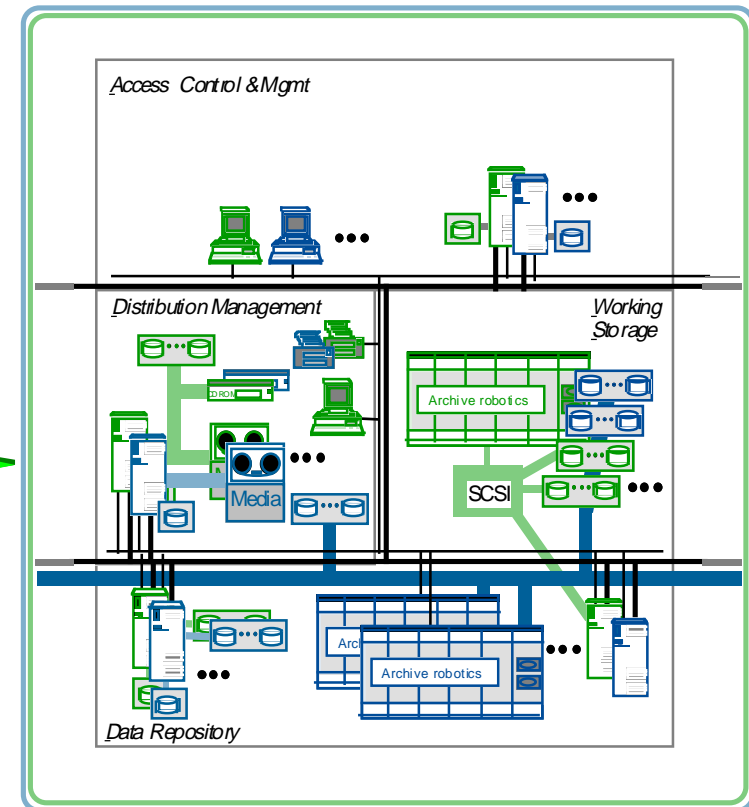 - User Modeling predictions of maximum user access
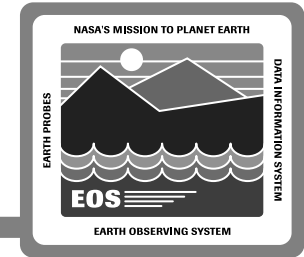
Phasing of Capabilities
Hardware Evolution

Release A
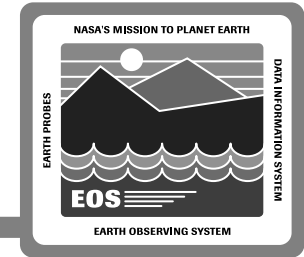
Release B

705-CD-002-001

MH3-7

Phasing of Capabilities Hardware Evolution (cont.)

Release A

- **Working Storage**

  - **Pooled Working Storage Disk**

  - **PDS Access Subject to Trade/Prototype**

- **Data Repository**

  - **Low Density, Higher Access Rate Tape**

- **Dual APCs and Admin Stations**

- **Limited Hard Media Distribution**

Phasing of Capabilities
Hardware Evolution (cont.)

Release B

- **Working Storage**

    - **Pooled Working Storage Disk, Full PDS Access**

    - **Former Data Repository Hardware Forms 2nd Tier**

- **Data Repository**

    - **High Density, "Archive" Media**

- **Multiple APCs and Admin Stations**

- **Expanded Hard Media Distribution**

- **NFS/DFS Access Supported**

Data Server Subsystem
Plans and Activities

- **Hardware/Systems**
  - SDS CDR Studies
  - EDF and Site Procurements
  - NAS Prototype
- **COTS Software**
  - COTS Encapsulation
  - DSS Prototype
- **Software Development**
  - Detailed OO System Design Through CDR
  - Baseline (Types, Content, Format, Volumes) Release A Data Types
  - Design CSDT -> HDF I/F